

ABSTRACT OF THE DISCLOSURE

5 A nanomechanical actuator/oscillator device and system are  
provided. The nanomechanical actuator/oscillator device  
comprising nanobimorphs, such as nanotubes, designed such that  
inducing a difference in charge density between the tubes (e.g.  
by biasing one tube positive with respect to the other with  
10 sufficient tube-to-tube contact resistance) induces lateral  
movement in the end of the bimorph, forming a nanoscale  
resonator, as well as a force sensor when operated in an inverse  
mode. A method of producing a novel nanobimorph structure with  
integrated electrodes is also provided.

15 JWP/daa